



MS APPEAL BRIEF - PATENTS
Docket No.: 0879-0277P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Seiichi MATSUI

Application No.: 09/662,323

Confirmation No.: 1512

Filed: September 14, 2000

Art Unit: 2622

For: IMAGING APPARATUS, SOLID IMAGING
DEVICE AND DRIVING METHOD FOR
SOLID IMAGING DEVICE

Examiner: K. L. Jerabek

SUBSTITUTE APPEAL BRIEF TRANSMITTAL FORM

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Appeal Brief on behalf of the Appellants in connection with the above-identified application.

The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.

A Notice of Appeal was filed on February 24, 2006.

Applicant claims small entity status in accordance with 37 C.F.R. § 1.27.

The fee has been calculated as shown below:

Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - \$120.00 (paid on June 9, 2006).

- Fee for filing an Appeal Brief - \$500.00 (large entity) (paid on June 9, 2006).
- Check in the amount of \$620.00 submitted on June 9, 2006.
- Please charge Deposit Account No. 02-2448 in the amount of \$0.00. A triplicate copy of this sheet is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 26, 2006

Respectfully submitted,

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Attachments: Notification of Non-Compliant Appeal Brief (copy)
Substitute Appeal Brief



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Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief <i>(37 CFR 41.37)</i> 	Application No. 09/662,323 Examiner KELLY JERABEK	Applicant(s) MATSUI, SEIICHI Art Unit 2622
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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on 09 June 2006 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2. The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3. At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4. (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5. The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6. The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7. The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8. The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9. The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10. Other (including any explanation in support of the above items):

2. Status of claims must identify all claims and identify claims that are on appeal.

4. Summary of subject claim matter must identify all independent claims on appeal to specification by page and line number and or paragraph number and/or drawings, if any.

6. Each ground or rejection must be argued under its own heading.

Tracey M. Young
 Patent Appeals Specialist



PATENT
0879-0277P

IN RE APPLICATION OF

BEFORE THE BOARD OF APPEALS

Seiichi MATSUI

Appeal No.:

APPL. NO.: 09/662,323

GROUP: 2612

FILED: September 14, 2000

Examiner: K. L. JERABEK

FOR: IMAGING APPARATUS, SOLID IMAGING DEVICE AND
DRIVING METHOD FOR SOLID IMAGING DEVICE

**SUBSTITUTE
APPEAL BRIEF ON BEHALF
OF APPELLANT:
Seiichi MATSUI**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I. REAL PARTY IN INTEREST

The real party in interest for this application is the Assignee, FUJI PHOTO FILM CO., LTD., No. 210, Nakanuma, Minami-Ashigara-shi, Kanagawa, JAPAN.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences pending with respect to the subject matter of the present application.

III. STATUS OF CLAIMS

Claims 4-12 and 16-24 are pending in this application, and claims 1-3 and 13-15 have been canceled. Claims 4, 11, 12, 16, 23 and 24 are independent claims. Claims 4-12 and 16-24 have been finally rejected, and it is from the final rejection of claims 4-12 and 16-24 that this Appeal has been taken.

IV. STATUS OF AMENDMENTS

No amendments have been presented after the Final Rejection.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

In accordance with independent Claim 4, the invention of the subject application provides for an imaging apparatus comprising a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors [Specification, page 8, lines 19-22], said solid imaging device comprises a matrix of transferring gates, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 through page 9, line 5]; a shooting optical system that forms a subject image on a receiving surface of said solid imaging device [Specification, page 10, line 28 through page 11, line 1]; a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced [Specification, page 11, lines 2-6]; and a signal processing device that produces the image signals by producing pixel information of one line

from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

In accordance with independent Claim 11, the invention of the subject application provides for a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to a matrix of transferring gates when image signals with high definition are produced [Specification, page 7, line 19 through page 7, line 9]; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said matrix of transferring gates when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 through page 9, line 5]; and producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

In accordance with independent Claim 12, the invention of the subject application provides for a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to a matrix of transferring gates when image signals with high definition are produced [Specification, page 7, line 19 through page 7, line 9]; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said matrix of transferring gates when image signals with low definition are produced

[Specification, Fig. 3; page 8, line 26 though page 9, line 5]; and producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

In accordance with independent Claim 16, the invention of the subject application provides for an imaging apparatus comprising a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, said solid imaging device comprises transferring gates, each associated with a photoelectric transferring device, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 though page 9, line 5]; a shooting optical system that forms a subject image on a receiving surface of said solid imaging device [Specification, page 10, line 28 through page 11, line 1]; a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 though page 9, line 5]; and a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

In accordance with independent Claim 23, the invention of the subject application provides for a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of

applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced [Specification, page 7, line 19 through page 7, line 9]; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 though page 9, line 5]; and producing pixel information of one line from the pixel information of each pair of two adjoining lines from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

In accordance with independent Claim 24, the invention of the subject application provides for a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced [Specification, page 7, line 19 through page 7, line 9]; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced [Specification, Fig. 3; page 8, line 26 though page 9, line 5]; and producing pixel information of one line from the pixel information of each pair of two adjoining lines from said solid imaging device when the image signals with the low definition are produced [Specification, page 11, lines 7-10].

The summary of the claimed subject matter herein has been made to comply with 37 C.F.R. § 41.37(c)(1)(v) and is not to be considered as limiting the claimed invention.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 4-7, 9-12, 16-19 and 21-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yamaguchi et al.* (USP 6,342,921, filed Nov. 18, 1998, issued Jan. 29, 2002) (hereinafter “*Yamaguchi*”) in view of *Harada et al.* (USPN 6,108,036, filed Mar. 25, 1997, issued Aug. 22, 2000) (hereinafter “*Harada*”).

B. Claims 8 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yamaguchi* in view of *Harada* and further in view of *Dischert* (USPN 6,040,869, filed Mar. 31, 1998, issued Mar. 21, 2000) (hereinafter “*Dischert*”).

VII. ARGUMENT

A. Rejection of claims 4-7, 9-12, 16-19 and 21-24 as being unpatentable over Yamaguchi in view of Harada

1. Argument Summary

The reasoning provided in support of the rejection of claims 4-7, 9-12, 16-19 and 21-24 under 35 U.S.C. § 103(a) as being unpatentable over *Yamaguchi* in view of *Harada* fails to establish *prima facie* obviousness. Generally, the deficiencies of the rejection are that the rejection attributes certain claim features to the references that a detailed reading of the references reveals are not taught therein; as the nature and the purpose of the device of *Yamaguchi* is recognized, it is evident that there is no suggestion or motivation in either of the references cited in support of the rejection or in knowledge generally available to those skilled in

the art to modify *Yamaguchi* in the manner asserted by the rejection; and by asserting that certain modifications of the device of *Yamaguchi* would have been obvious without proper suggestion or motivation in the applied references or elsewhere to make the asserted modifications, the rejection appears to rely on impermissible hindsight. Such deficiencies exist for the rejection of each of claims 4-7, 9-12, 16-19 and 21-24.

2. The Legal Requirements of *Prima Facie* Obviousness

To establish *prima facie* obviousness, all claim limitations must be taught or suggested by the prior art and the asserted modification or combination of the prior art must be supported by some teaching, suggestion, or motivation in the applied references or in knowledge generally available to one skilled in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The prior art must suggest the desirability of the modification in order to establish a *prima facie* case of obviousness. *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1995). It can also be said that the prior art must collectively suggest or point to the claimed invention to support a finding of obviousness. *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986); *In re Ehrreich*, 590 F.2d 902, 908-909, 200 USPQ 504, 510 (C.C.P.A. 1979).

The teaching or suggestion to make the asserted combination or modification of the primary reference must be found in the prior art and cannot be gleaned from applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). In other words, the use of hindsight to reconstruct the claimed invention is impermissible. *Uniroyal Inc. v. Rudlan-Wiley Corp.*, 5 USPQ 1434 (Fed. Cir. 1983).

Finally, when considering the differences between the primary reference and the claimed invention, the question for assessing obviousness is not whether the differences themselves

would be been obvious, but instead whether the claimed invention as a whole would have been obvious. *Stratoflex Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983).

3. The Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 4

Independent claim 4 is directed to an imaging apparatus comprising a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, said solid image device comprises a matrix of transferring gates, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced; a shooting optical system that forms a subject image on a receiving surface of said solid imaging device; a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced; and a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 4

In maintaining the Examiner's rejection of independent claim 4, the Examiner asserts in the Final Official Action on page 4, as follows:

...However, Yamaguchi does not disclose a signal processing device that produces pixel information of one line from the pixel

information of each pair of two adjoining lines when image signals of low definition are produced.

Harada discloses in figure 1 an imaging apparatus (1) including a solid imaging device (14-16) and an optical system (3). The imaging apparatus (1) disclosed by Harada includes a signal processing device (72) that produces image signals by producing pixel information of one line from the pixel information of a pair of two adjoining lines read from the solid imaging device (fig. 9; col. 34, lines 23-41). Therefore it would have been obvious for one skilled in the art to have been motivated to include the signal processing device capable of producing image signals by producing pixel information of lone line from the pixel information of a pair of adjoining lines as disclosed by Harada in the image pickup device capable of performing a line thinning operation as disclosed by Yamaguchi. Doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field (Harada: col. 34, lines 20-27).

Appellant disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

The disclosure of *Yamaguchi* is directed to a lattice-type solid state image pickup device. At col. 12, lines 39-61, *Yamaguchi* discloses as follows:

Since the above CCD can sequentially generate the signals of all pixels without mixing, it is suitable for an electronic still camera and an image fetching. However, as compared with an image pickup device for a video camera having the same number of pixels for performing an interlace output, when the charges are transferred by the same clock, an output time of one picture plane (from the top to the bottom of the screen) is doubled. In this example, as mentioned above, as a signal for monitoring and an image pickup signal for the automatic control such as an auto focus control and the like, by reducing the number of horizontal lines, the image pickup signal of one picture plane is outputted at a high speed and, in case of the line thinning, a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented. On the other hand, in case of fetching the photographed image into the flash memory, the image pickup signal of the full-frame (image pickup signal in which the number of lines is not thinned or decimated) is generated. Even in case of the line thinning, since the color sequence is the same as the case of the full frame, a problem such that the signal processing circuit is complicated can be avoided.

In other words, *Yamaguchi* teaches reading out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit.

The disclosure of *Harada* is directed to an imaging apparatus having a spatial filter and image shifting mechanism controller based on an image mode. At col. 34, lines 23-41, *Harada* discloses as follows:

The FIG. 9 shows an equivalent circuit to the signal processing circuit 72 in the first imaging mode. In this method, the circuit outputs $\{(N/2) \times M\}$ kinds of add signals during output from each field.

Combinations of light-receiving regions d to be added differ depending upon a time when the first field outputs or when the second field outputs. In the case of output from the first field, for example, a light-receiving signal from a light-receiving region $d(n, m)$ belonging to the n -th row and the m -th column array is added to a light-receiving signal from a light-receiving region $d(n+1, m)$ belonging to the $(n+1)$ -th row and the m -th column array. In the case of output from the second field, a light-receiving signal from a light-receiving region $d(n, m)$ is added to a light-receiving signal from a light-receiving region $d(n-1, m)$ belonging to the $(n-1)$ -row and the m -th column array. The processing method for reading the light-receiving signal is generally referred to as "interlacing" or "two-pixel-mixing reading".

As noted above, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*, one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information of **non-adjointing** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest "a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced."

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 4

In support of the Examiner's rejection of claim 4 in the Final Official Action on page 4, the Examiner asserts as follows:

Therefore it would have been obvious for one skilled in the art to have been motivated to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by Harada in the image pickup device capable of performing a line thinning operation as disclosed by Yamaguchi. Doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field (Harada: col. 34, lines 20-27).

The Examiner concludes it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

The mode described in *Yamaguchi* is low resolution while the mode in *Harada* is high resolution. The Examiner asserts in the final Official Action on page 3 as follows:

Although the Yamaguchi reference discloses a thinning operation for readout and the Harada reference discloses a method where all of the pixels of an imaging array are read out, this does not prevent the two references from being combined. The Harada reference is cited for the purpose of disclosing a method of producing pixel information of one line from pixel information of two adjoining lines (interlacing) and the Yamaguchi reference discloses applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines.

The Examiner's comments fail to address why one skilled in the art would be so motivated to combine the references as asserted by the Examiner. The portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports Appellant's argument by teaching "a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented." As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. *Yamaguchi* teaches away from the purported combination

Yamaguchi seeks to provide a device that obtains "an image of a good resolution" (col. 17, lines 25-26). In combining the teachings of the references, as suggested by the Examiner, *Yamaguchi* would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as *Yamaguchi* teaches away from the purported modification.

d. The rejection of independent claim 4 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 4 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 4 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 4.

4. Rejection Fails to Establish Prima Facie Obviousness of Dependent Claims 5-7, 9 and 10

Claims 5-7, 9 and 10 depend directly on claim 4. Consequently, the imposed rejection of claims 5-7, 9 and 10 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claims 5-7, 9 and 10 for at least the reasons applied to independent claim 4 (see **VII. A. 3.**)

5. Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 11

Independent claim 11 is directed to a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to a matrix of transferring gates when image signals with high definition are produced; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said

vertical transferring routes to said matrix of transferring gates when image signals with low definition are produced; and producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

- a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 11

In support of the Examiner's rejection of claim 11, the Examiner asserts "Re claim 11, see claim 5." Appellant respectfully disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

As noted above with regard to claim 4, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*, one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information **of non-adjoining** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest "a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced."

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 11

The Examiner asserts it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

As noted above with regard to claim 4, the portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports this argument by teaching “a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented.” As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. *Yamaguchi* teaches away from the purported combination

As noted above with regard to claim 4, *Yamaguchi* seeks to provide a device that obtains “an image of a good resolution” (col. 17, lines 25-26). In combining the teachings of the

references, as suggested by the Examiner, *Yamaguchi* would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as *Yamaguchi* teaches away from the purported modification.

d. The rejection of independent claim 11 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 11 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 11 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 11.

6. Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 12

Independent claim 12 is directed to a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to a matrix of transferring gates when image signals with high definition are produced; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said matrix of

transferring gates when image signals with low definition are produced; and producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 12

In maintaining the Examiner's rejection of independent claim 12, the Examiner asserts in the Final Official Action on page 8, "Re claim 12, see claim 6."

Appellant disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

As noted above with regards to claim 4, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*, one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information of **non-adjoining** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest "a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced."

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 12

The Examiner asserts it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

As noted above with regard to claim 4, the portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports Appellant's argument by teaching "a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented." As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. *Yamaguchi* teaches away from the purported combination

Yamaguchi seeks to provide a device that obtains "an image of a good resolution" (col. 17, lines 25-26). In combining the teachings of the references, as suggested by the Examiner,

Yamaguchi would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as teaches away from the purported modification.

d. The rejection of independent claim 12 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 12 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 12 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 12.

7. Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 16

Independent claim 16 is directed to an imaging apparatus comprising a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, said solid imaging device comprises transferring gates, each associated with a photoelectric transferring device, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced; a shooting optical system that forms a subject image on a receiving surface of said solid imaging device; a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the

timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced; and a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

- a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 16

In maintaining the Examiner's rejection of independent claim 16, the Examiner asserts in the Final Official Action on page 8, "Re claim 16, see claim 4."

Appellant disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

As noted above with regards to claim 4, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*, one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information of **non-adjoining** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest "a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced."

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 16

The Examiner asserts it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

As noted above with regard to claim 4, the portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports this argument by teaching “a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented.” As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. Yamaguchi teaches away from the purported combination

Yamaguchi seeks to provide a device that obtains “an image of a good resolution” (col. 17, lines 25-26). In combining the teachings of the references, as suggested by the Examiner, *Yamaguchi* would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as *Yamaguchi* teaches away from the purported modification.

d. The rejection of independent claim 16 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 16 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 16 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 16.

8. The Rejection Fails to Establish Prima Facie Obviousness of Dependent Claims 17-19, 21 and 22

Claims 17-19, 21 and 22 depend directly on claim 16. Consequently, the imposed rejection of claims 17-19, 21 and 22 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima*

facie case of obviousness with respect to claims 17-19, 21 and 22 for at least the reasons applied to independent claim 16 (see **VII. A. 7.**).

9. The Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 23

Independent claim 23 is directed to a driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced; and producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 23

In maintaining the Examiner's rejection of independent claim 23, the Examiner asserts in the Final Official Action on page 9, "Re claim 23, see claim 5."

Appellant disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

As noted above with regards to claim 4, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*,

one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information **of non-adjoining** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest “a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.”

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 23

The Examiner asserts it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

As noted above with regard to claim 4, the portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to

ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports this argument by teaching “a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented.” As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. *Yamaguchi* teaches away from the purported combination

Yamaguchi seeks to provide a device that obtains “an image of a good resolution” (col. 17, lines 25-26). In combining the teachings of the references, as suggested by the Examiner, *Yamaguchi* would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as *Yamaguchi* teaches away from the purported modification.

d. The rejection of independent claim 23 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 23 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 23 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in

view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 23.

10. The Rejection Fails to Establish Prima Facie Obviousness of Independent Claim 24

Independent claim 24 is directed to A driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced; applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced; and producing pixel information of one line from the pixel information of each pair of two adjoining lines from said solid imaging device when the image signals with the low definition are produced.

a. The cited references fail to teach or suggest all of the claim elements as set forth in independent claim 24

In maintaining the Examiner's rejection of independent claim 24, the Examiner asserts in the Final Official Action on page 8, "Re claim 24, see claim 6."

Appellant disagrees that *Harada* discloses producing image signals by producing the pixel information of one line from the pixel information of each pair of two adjoining lines read from the solid imaging device when the image signals with low definition are produced.

As noted above with regards to claim 4, *Harada* discloses processing one light-receiving signal with another light-receiving signal. However, according to the teachings of *Yamaguchi*, one of the two lines read out is not a light receiving signal as one of the rows of pixels is not charged. As such, in combining the teachings of the two references, the resultant device would produce pixel information of one line from the pixel information **of non-adjoining** lines. As such, Appellant maintains that the cited references, either alone or in combination, assuming these references are combinable which Appellant does not admit, fail to teach or suggest “a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.”

As the Examiner has failed to provide references that teach or suggest all of the claim elements, Appellant respectfully submits the Examiner has failed to establish *prima facie* obviousness.

b. The Examiner has failed to provide proper motivation in support of his rejection of independent claim 24

The Examiner asserts it would have been obvious to one of ordinary skill in the art to modify the method disclosed in *Yamaguchi* to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by *Harada* in the image pickup device capable of performing a line thinning operation as disclosed by *Yamaguchi*, asserting doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field. Appellant respectfully disagrees that there is motivation to combine the references and further disagree that these references are properly combinable.

As noted above with regard to claim 4, the portion of the reference the Examiner is relying upon in support of his rejection is based upon an interlaced VGA signal, which energizes pixels in an alternate manner. *Yamaguchi* reads out two lines of pixels at a time in order to ensure that one energized or charged row of pixels is read out when the thinning takes place without complicating the signal processing circuit. Because only one line of pixels is energized when pairs are read out, there is no reason to average the two lines as taught by *Harada*. Support for this argument may be found in *Yamaguchi* in col. 12, lines 39-60.

Further, *Yamaguchi* specifically supports this argument by teaching “a situation such that a color sequence in the vertical direction which is specified by the array of the color filters is broken is prevented.” As such, Appellant maintains that one skilled in the art would not be motivated to combine the averaging of *Harada* with the teachings of *Yamaguchi*.

c. *Yamaguchi* teaches away from the purported combination

Yamaguchi seeks to provide a device that obtains “an image of a good resolution” (col. 17, lines 25-26). In combining the teachings of the references, as suggested by the Examiner, *Yamaguchi* would effectively be processing one energized or charged row of pixels with one non-energized or non-charged row of pixels. By doing this, signal quality would be reduced. This is contrary to the purpose and express teachings of *Yamaguchi* as noted above. As such, Appellant respectfully submits that one skilled in the art would not modify *Yamaguchi* as purported by the Examiner as *Yamaguchi* teaches away from the purported modification.

d. The rejection of independent claim 24 relies on impermissible hindsight reasoning

By asserting it would have been obvious to modify *Yamaguchi* to include the features of *Harada*, with no suggestion or motivation in the applied references or elsewhere to do so, the

rejection appears to rely on impermissible hindsight reasoning. As such, Appellant maintains that independent claim 24 is patentable over *Yamaguchi* in view of *Harada*. Therefore, the imposed rejection of claim 24 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 24.

B. Rejection of claims 8 and 20 as being unpatentable over Yamaguchi in view of Harada and further in view of Dischert

1. The Rejection Fails to Establish Prima Facie Obviousness of Dependent Claim 8

Claim 8 depends directly on independent claim 4 and *Dischert* does not remedy the above noted deficiencies with respect to *Yamaguchi* and *Harada*, as applied to independent claim 4 (see VII. A. 3.). Therefore, the imposed rejection of claim 8 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* and further in view of *Dischert* should not be sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 8 for at least the reasons applied to independent claim 4.

2. The Rejection Fails to Establish Prima Facie Obviousness of Dependent Claim 20

Claim 20 depends directly on independent claim 16 and *Dischert* does not remedy the above noted deficiencies with respect to *Yamaguchi* and *Harada*, as applied to independent claim 16 (see VII. A. 7.). Therefore, the imposed rejection of claim 20 under 35 U.S.C. § 103 as being unpatentable over *Yamaguchi* in view of *Harada* and further in view of *Dischert* should not be

sustained as the Examiner has not established a *prima facie* case of obviousness with respect to claim 20 for at least the reasons applied to independent claim 16.

X. CONCLUSION

For the reasons specifically set forth above, the outstanding rejections set forth in the Final Office Action should be reversed.

Respectfully submitted,

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IX. CLAIMS APPENDIX A

Claims 1-3 (Canceled)

4. (Previously Presented) An imaging apparatus comprising:

a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, said solid imaging device comprises a matrix of transferring gates, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced;

a shooting optical system that forms a subject image on a receiving surface of said solid imaging device;

a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced; and

a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

5. (Original) The imaging apparatus as set forth in claim 4, wherein said timing generator applies gate pulses for transferring pixel information of all the vertical lines to said vertical transferring routes without reducing the pixel information to said transferring gates at least when image signals with high definition are produced.

6. (Original) The imaging apparatus as set forth in claim 4, wherein said timing generator applies gate pulses for dividing pixel information of all the vertical lines into pixel information of a plurality of fields to transfer the pixel information to said vertical transferring routes to said transferring gates at least when image signals with high definition are produced.

7. (Original) The imaging apparatus as set forth in claim 4, wherein said signal processing device reduces pixel information of horizontal lines when image signals with low definition are produced.

8. (Original) The imaging apparatus as set forth in claim 4, wherein:
said signal processing device has an interpolation operation device that interpolates the image signals with the low definition to produce image signals; and
said signal processing device outputs image signals including the produced image signals.

9. (Original) The imaging apparatus as set forth in claim 4, further comprising a displaying device that displays a shot image according to the image signals with the low definition.

10. (Original) The imaging apparatus as set forth in claim 4, further comprising a recording device that records the image signals of the high definition.

11. (Previously Presented) A driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of:

applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to a matrix of transferring gates when image signals with high definition are produced;

applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said matrix of transferring gates when image signals with low definition are produced; and

producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

12. (Previously Presented) A driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of:

applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to a matrix of transferring gates when image signals with high definition are produced;

applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said matrix of transferring gates when image signals with low definition are produced; and

producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

Claims 13-15 (Canceled)

16. (Previously Presented) An imaging apparatus comprising:

a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, said solid imaging device comprises transferring gates, each associated with a photoelectric transferring device, to which gate pulses for transferring only the pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes are applied when image signals with low definition are produced;

a shooting optical system that forms a subject image on a receiving surface of said solid imaging device;

a timing generator that drives said solid imaging device and reads pixel information from said solid imaging device, the timing generator applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to vertical transferring routes to said transferring gates when image signals with low definition are produced; and

a signal processing device that produces the image signals by producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

17. (Previously Presented) The imaging apparatus as set forth in claim 16, wherein said timing generator applies gate pulses for transferring pixel information of all the vertical lines to said vertical transferring routes without reducing the pixel information to said transferring gates at least when image signals with high definition are produced.

18. (Previously Presented) The imaging apparatus as set forth in claim 16, wherein said timing generator applies gate pulses for dividing pixel information of all the vertical lines into

pixel information of a plurality of fields to transfer the pixel information to said vertical transferring routes to said transferring gates at least when image signals with high definition are produced.

19. (Previously Presented) The imaging apparatus as set forth in claim 16, wherein said signal processing device reduces pixel information of horizontal lines when image signals with low definition are produced.

20. (Previously Presented) The imaging apparatus as set forth in claim 16, wherein:
said signal processing device has an interpolation operation device that interpolates the image signals with the low definition to produce image signals; and
said signal processing device outputs image signals including the produced image signals.

21. (Previously Presented) The imaging apparatus as set forth in claim 16, further comprising a displaying device that displays a shot image according to the image signals with the low definition.

22. (Previously Presented) The imaging apparatus as set forth in claim 16, further comprising a recording device that records the image signals of the high definition.

23. (Previously Presented) A driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of:

applying gate pulses for transferring pixel information of all vertical lines to vertical transferring routes without reducing the pixel information to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced;

applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced; and

producing pixel information of one line from the pixel information of each pair of two adjoining lines read from said solid imaging device when the image signals with the low definition are produced.

24. (Previously Presented) A driving method for a solid imaging device in which pixel information of two adjoining lines composes color information of three primary colors, comprising the steps of:

applying gate pulses for dividing pixel information of all vertical lines into pixel information of a plurality of fields and transferring the pixel information to vertical transferring routes to transferring gates, each associated with a photoelectric transferring device, when image signals with high definition are produced;

applying gate pulses for transferring only pixel information of pairs of two adjoining lines with intervals of a plurality of lines to said vertical transferring routes to said transferring gates when image signals with low definition are produced; and

producing pixel information of one line from the pixel information of each pair of two adjoining lines from said solid imaging device when the image signals with the low definition are produced.

X. EVIDENCE APPENDIX B

There is no additional evidence pursuant to §§ 1.130, 1.131, or 1.132 and/or evidence entered by or relied upon by the examiner that is relevant to this appeal.

XI. RELATED PROCEEDINGS APPENDIX C

There are no related proceedings.